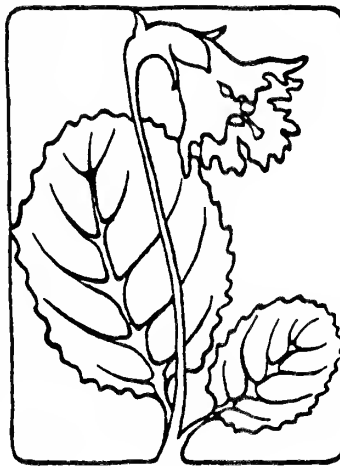


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# SHORTIA

NEWSLETTER OF THE  
WESTERN CAROLINA BOTANICAL CLUB

SPRING 1990



DOROTHY RATHMANN, Editor



FROM THE PRESIDENT.....Bill Verduin

I know all of you are as eager as I am for our field trips to get under way. Alder catkins are shedding pollen and bittercress is already in bloom. These two seem to be the early birds. Let me remind you about a few procedures and courtesies related to our trips.

At our meeting place, look especially for an unfamiliar face. Welcome visitors, new members, or "seldom goers" lest any should feel unwelcome. Do offer rides -- and accept rides -- to conserve gas, to facilitate parking and, most of all, to make new friends. Don't always ride with your best buddies.

A good trip leader has scouted not just the trail but the flowers, too. If you get ahead of the leader, you will miss interesting discoveries he will point out. And don't lag too far behind, either, for the same reason. A good leader will appoint a sweep to bring up the rear and will slow forward progress, if necessary, to keep from fracturing the group. A good leader will make every effort to ensure that everyone in the group has an opportunity to see any rare or unusual plant or any point of particular interest.

Remember, these are field trips. We come to learn and share. Never hesitate to ask questions for fear you are asking about some common flower that "everybody knows." None of us was born with knowledge -- we all learned each and every flower one name at a time. Bring your field guide and hand lens. Writing names will help to make them stick. Sure, this slows down the group -- but the whole purpose of the trip is to learn and enjoy. One of the best trips we had last Fall took over two hours to cover one mile. Our trips are not for hikers!

On some of our trips this Spring, we plan to offer beginners and serious learners an opportunity to move at a snail's pace without slowing down the larger group. A knowledgeable person will lead this group and will deal with basics: how to use a lens, how to use a simple key such as Newcomb's, what to look for when identifying a "stranger." The Program Committee hopes this experiment will encourage more serious learning by those who find they can only pick up an occasional tidbit on the typical trip but wish for more personal attention.

And a matter of courtesy. When we leave the parking area after a trip, be sure the last car is not left before its motor is running. Many of our parking areas are not lovely places to be stranded with a dead car after all your friends have just driven off.

Field trips are fun trips. Come often and enjoy!

## GIFTS TO OTHER ORGANIZATIONS

At the Annual Meeting WCBC members approved the following contributions: \$100 to the NC Nature Conservancy; \$75 to the NC Arboretum; \$75 to University Botanical Gardens at Asheville; \$75 to Southern Appalachian Highlands Conservancy (Roan Mt.).

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OFFICERS FOR 1990.....Sam Childs

PRESIDENT, BILL VERDUIN: To our good fortune, Bill agreed to serve another year. His qualifications are many: degree in Forestry from the University of Michigan, director of the Kanuga Conference, association with Camp Sequoia, teacher of Asheville School for Boys, and a resident in this area since 1950.

VICE PRESIDENT, DEAN CRAWFORD: Dean retired following a career as Professor of History at the University of Minnesota. His interests and experiences with many conservation groups will be a contribution to our Club.

SECRETARY, CHARLOTTE CARMEN<sup>A</sup>: Charlotte retired from a teaching career in Springfield, Massachusetts and has been active in Friends of the Library and as a remedial reading teacher in Drysdale School. She will be serving the Club as Secretary for a third term.

TREASURER, JOHN SABY: John is a research physicist who, in retirement, has expanded his interests in gardening and botany. He is also a "third timer."

RECORDER, ELTON HANSENS: With Elton as Recorder we indeed have a seasoned worker: past president of WCBC, long time contributor to the Buck Springs Nature Trail, and an experienced staff member of the Recorder Committee. As a retired entomologist from Rutgers University, Elton has given another dimension to the Club.

SECOND WIND HALL OF FAME AWARD TO DICK SMITH.....Tom Hallowell

At the WCBC Annual Meeting on January 19, 1990, the Honors Committee presented Dick Smith with the Second Wind Hall of Fame award. Dick has expanded and extended his lifetime interest in botany into retirement activity of benefit to many people in western North Carolina and beyond. His recently published book, WILD PLANTS OF AMERICA, adds generously to that! Locally he has presented wildflower programs, led field trips and taught classes at Blue Ridge Community College. In other activity, Dick has served as volunteer for the U. S. Forest Service, Blue Ridge Parkway, Connetsee Falls Fire Auxiliary, and other local organizations. Congratulations, Dick!

#### NEED A HAND LENS?

Anne Ulinski reports satisfaction with a 10x hand lens (jeweler's loupe) which she recently purchased for \$4.95 from Mystical Merchandising, PO Box 416, Mystic, CN 06355 (Phone: 203-572-0485). You might like to try hers before ordering for yourself.



1989 RECORDER'S REPORT.....Bessie Sinish

The Annual Meeting of the Western Carolina Botanical Club is a good time to review some of the past year's activities. I will report on one.

During this past year a Recorder's Committee of six members, including the Chairman and the President, was formed. Although the following objectives were reported in SHORTIA, they bear repeating:

- (1) To record the rare or unusual flower, tree, moss, fern and lichen -- and large masses of flowers.
- (2) To learn of the different habitats visited, paying attention to what grows in each type. For example, what grows in an evergreen forest, a bog, an open field.
- (3) To follow the succession of plants of the different seasons by returning to a specified area many times.
- (4) To study the importance of plants in the ecological system.

Following all WCBC field trips, trees, flowers, ferns, etc. are recorded. Many thanks to Anne Ulinski who, over the past three years, has computerized these lists. These are for the members to use and can be obtained from the Chairman of the Recorder Committee. These lists are also used as a guide for setting up our field trips as well as suggesting articles in SHORTIA.

In this coming decade, Conservation is of the utmost importance -- The Thing. The WCBC, itself, is not a conservation organization but it does behoove us to be aware of how plants play a part in our ecological system so we, as individuals, can understand and participate in conservation. The above objectives contribute in this area.

With Newcomb in hand, Fern and Tree Finders, and a 10 power magnifying glass, anyone can go into the field to observe, to feel, to smell, to explore -- to enjoy nature with friends on our field trips or by themselves.

True, we have many knowledgeable members, but in a sense we are all beginners -- just having different stages in our interest. I like this quotation: "The past is but the beginning of a beginning and all that is and has been is but the twilight of a dawn." Do come and join us.

In closing I would like to thank my committee: Elton Hansens, Grace Rice, Laverne and Bud Pearson, and Bill Verduin.

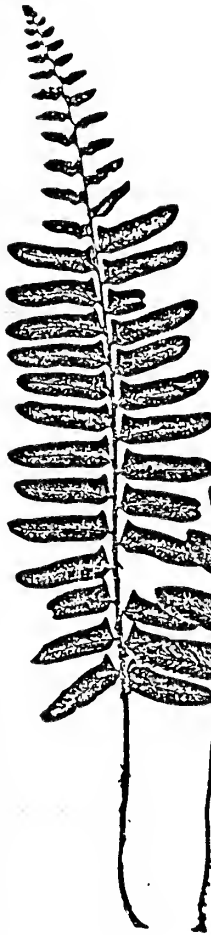




# How Can One Tell Them Apart?

Some winter ferns stand--or lie--bright green,  
even until their new spring fronds appear.

Three are commonly seen,  
but how can one tell them apart easily?



CHRISTMAS FERN  
(*Polystichum acrostichoides*)

COMMON POLYPODY  
(*Polypodium virginianum*)



- ← Leaflets attached by tiny stalk
- Leaflets attach directly; no stalk →
- Also:
- ← Fertile fronds (remnants of spore cases massed on back of tip sharply narrowed at tip)
- Fronds all the same shape (remnants of spore cases on back as large, brown individual dots) →
- ← Leaflets with "ear lobes" (auricled)
- Leaflets not lobed →
- ← Stalk green, scaled
- Stalk green, smooth →
- ← Clusters throughout woodlands
- Mats on woodland rocks →

All silhouettes  
1/3 natural size

EBONY SPLEENWORT  
(*Asplenium platyneuron*)

Can be identified from  
the two ferns above by  
its stalk and shape.

Stalk dark, reddish brown →  
Fronds very narrow →

Also:

Leaflets auricled →  
Leaflets taper narrower  
toward base of frond →  
Small sterile fronds lie  
flat →  
Taller fertile fronds  
stand upright →



Some other evergreen  
ferns:

- MARGINAL WOODFERN  
*Dryopteris marginalis*
- INTERMEDIATE WOODFERN  
*Dryopteris intermedia*
- MOUNTAIN SPLEENWORT  
*Asplenium montanum*
- WALKING FERN  
*Camptosaurus rhizophyllus*
- CLIMBING FERN  
*Lygodium palmatum*
- GRAPEFERN  
*Botrychium dissectum*

--Barbara Hallowell



INDEPENDENT FERN GAMETOPHYTES.....J. Dan Pittillo

During the past few decades bryologists, in consultation with pteridologists, have come to realize that often among their moss collections are fern gametophytes that are not typical of our common temperate terrestrial gametophytes. Three families are represented, namely, Hymenophyllaceae, Vittariaceae, and Grammitidaceae. Many of these gametophytes do not typically produce mature sporophytes throughout their range. They have been found in much of the eastern United States and elsewhere, including parts of western North America, Japan, India, Hawaii and Central America. These plants were first brought to the attention of a broader scientific community by W. H. Wagner, Jr. and A. J. Sharp in an article in SCIENCE in 1963.

One of Wagner's students, Don Farrar now of Iowa State University, has become one of, if not the leading, gametophyte fern specialist. He has been studying their morphology and recently differentiating them with the aid of gel electrophoresis of their enzymes, a more powerful comparative tool than those of anatomy and physiology. This technique has allowed him to compare certain enzymes of different populations of similar and dissimilar species in order to help determine the amount of relatedness. Some of his work presents some intriguing possibilities when related to the paleoecological history of the independent gametophytes. There are four independent types of gametophytes in our area:

Grammitis nimbata is represented at only one locality in the United States, near Highlands, North Carolina. It has survived here through the most severe cold and dry periods in recorded history and produces occasional, more vulnerable, sporophytes. Dr. Farrar noted three small fronds here in late summer 1989.

Vittaria, a thalloid form about the size of a small fingernail, is perhaps the most common independent gametophyte, often found on acidic boulders and cliff bases wherever there is low light and sufficient moisture. Vittaria lineata occurs over most of Florida into the southeastermost corner of Georgia but the enzyme banding of the independent Vittaria gametophyte in the gel is more similar to the tropical American species, Vittaria graminifolia.

The Hymenophyllaceae is represented by two genera, Hymenophyllum and Trichomanes. Hymenophyllum tunbridgense occurs naturally in the Eastatoe Gorge of South Carolina and the gametophytes, very similar in appearance to Vittaria, occur in an adjoining four-county area. Trichomanes, comprised of fine bits of green lent-like filaments, is represented by two species, T. petersii and T. boschianum. The independent Trichomanes gametophytes have enzyme banding patterns distinct from the above species in the Southern Appalachians, but similar patterns in Arkansas and Louisiana. Thus, there are probably at least three species involved.

With the exception of Grammitis, which Farrar suggests might be a recent long-distance introduction into the Southern Appalachians, the independent gametophytes are probably remnants of once wide-spread species that may have been more normal in their life cycles. This implies that the Tertiary flora, the wide-spread forests that had some tropical elements, may have contained these ferns. What is a bit difficult for us to imagine is how they have made it through the glacial periods and continue to survive throughout the mountains in our spruce-fir forests as well as in northern areas. Vittaria populations extend from northern Alabama to western Kentucky and northern Pennsylvania while Trichomanes overlaps this area and extends westward into Arkansas and northward into New Hampshire. This must mean that the gametophytes really have a much greater tolerance to cold weather than their sporophytic counterparts and have apparently "hung on to life by the tiny threads" that make up their genes with little other protective cellular material.



# LOOK AGAIN !

We frequently come across the Hop Clovers--diffusely branched plants with trifoliate leaves and tiny yellow papilionaceous flowers packed into little heads that gain our notice principally because of their numbers. Superficially, they tend to look alike, and all have come here from Europe, Asia, or even Africa, but there are three distinct species.

The largest and most erect is Trifolium agrarium. This can be distinguished by its palmately divided leaves (which means that all three leaflets are sessile) as contrasted with the pinnate leaves of the other species (in which the terminal leaflet is stalked). Intermediate in size is T. procumbens (or T. campestre), which in addition to being slightly smaller in all respects trails weakly over the ground; this has given it the name of Low Hop Clover.



TRIFOLIUM AGRARIUM

Even smaller is T. dubium, known as Least Hop Clover. Here the inflorescence consists of only 5 to 15 flowers, compared with at least 20 in T. agrarium and T. procumbens.



MEDICAGO LUPULINA

The pinnate-leaved Hop Clovers are often confused with another weed of Eurasian ancestry: Black Medick (Medicago lupulina). In the former, the yellow corollas wither to a pale brown color but remain in place, thus concealing the legumes, or "pods". On the other hand, the flowers of Black Medick fall off at maturity. This exposes tightly coiled, conspicuously veined, kidney-shaped legumes that turn black as they ripen. Interestingly, this plant has a familiar relative of very different appearance--the blue-flowered M. sativa, which we know as Alfalfa.

*Dick Smith*





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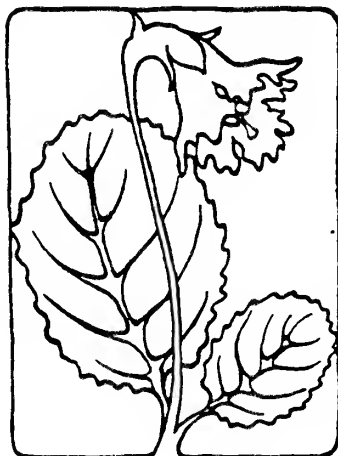


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# SHORTIA

NEWSLETTER OF THE  
WESTERN CAROLINA BOTANICAL CLUB

SUMMER 1990



DOROTHY RATHMANN, Editor



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OFFICERS

|                 |                  |            |                 |
|-----------------|------------------|------------|-----------------|
| President:      | Bill Verduin     | Treasurer: | John Saby       |
| Vice President: | Dean Crawford    | Recorder:  | Elton Hansens   |
| Secretary:      | Charlotte Carman | Historian: | Louise Foresman |

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FROM THE PRESIDENT.....Bill Verduin

I've known the Indian Cucumber Root for many years and always give it a friendly greeting as I pass a small colony. But just the other day as I was admiring some especially tall ones in full bloom, I realized I had never really looked carefully at the individual flower. Sure, they aren't spectacular, certainly not in the league with Fire Pink, but they definitely are worth a good, long look.

First off, the six petals -- or are those three sepals and three petals? -- called immediately to mind Dick Smith's presentation on the Monocotyledons. Look again -- six stamens and three stigmas -- three very prominent long, dark "receiving lines" nicely recurved at the ends. And in this species, the ovary is clearly visible and obviously superior. So, you see, it is in the Lily family, a thought I must admit had never occurred to me. No Turk's Cap to be sure, but beautiful in its own way.

By chance, that very same evening, I picked up a treasured book by John Burroughs, one of the truly great American nature writers. My bookmark directed me to Chapter 14 where the first words to meet my eyes were:

The casual glances or the admiring glances that we cast upon nature do not go very far in making us acquainted with her real ways. Only long and close scrutiny can reveal these to us. The look of appreciation is not enough; the eye must become critical and analytical if we would know the exact truth. Close scrutiny of an object in nature will nearly always yield some significant fact that our admiring gaze did not take in.

Isn't this what the Botanical Club is all about? Dick Smith's "Look Again!", a regular feature in SHORTIA, and Elton Hansens' "A Closer Look" invite us to dig in just a bit deeper than an admiring glance. And our field trips, likewise, give us opportunities to scrutinize the parts that make up the whole. Some may think that detracts somehow from the beauty of the whole. I think not -- quite the opposite. Just take a good close look at the Indian Cucumber Root the next time you meet one.

PS: A Challenge -- Have you ever really seen the flower on the Indian Paintbrush?



## ADDITIONS TO 1990 MEMBERSHIP LIST

Hendersonville, NC 28739 unless otherwise noted

Cathell, Kay, Rt. 13, Box 254.....  
Devitt, Clayton & Barbara, 18 Hillendale Road  
Asheville, NC 28805..... 251-1846  
Glass, Dan & Evelyn, 228 Raintree Drive..... 891-3435  
Harris, Jessie M., 4401 W Street, NW, Washington, DC 20007....  
Harrison, F. L. & Ann, 107 Old Kanuga Road..... 697-8695  
Holmes, Bernice, 429 Turley Falls Road..... 891-2657  
Raymond, Ralph, 440 North Harper..... 692-9785  
Ronningen, Robert & Jane, Horseshoe Farm, 139 South Rugby Road 891-3123  
Sawyer, Martin & Ruth, Rt. 13, Box 451..... 697-1282  
2301 Fremont Drive, Sarasota, FL 34238  
Smoke, Henry, 606 Hague Drive, Columbus, NC 28722..... 804-3118  
Stevens, William & Jean, PO Box 2685, Hendersonville, NC 28793  
Watson, Louise, PO Box 729, Flat Rock, NC 28731.....  
**Change of Address**  
Casey, Rosellen, 15 Resada Drive, Brevard, NC 28712..... 884-2094  
Mack, Franklin & Ruth, 220 Echo Drive..... 693-7126

## GIFT TO LIBRARY

The WCBC Executive Committee has authorized donation of a copy of Dick Smith's "Wild Plants of America -- A Select Guide for the Naturalist and Traveler" to the Henderson County Library as a gift from the Club.

## WHENCE PLANT NAMES? Part I — The Common Names ..... Lowell Orbison

Plants and animals have lived together on earth for millions of years in a symbiotic relationship. Plants have provided food and oxygen for animals, and animals in turn have contributed carbon dioxide for plants and have helped in pollination and dispersal of seeds. Though many animals, and perhaps all, can recognize specific plants for their own use, only man has developed a language which allows him to give names to plants and thus communicate with others about a specific plant.

For thousands of years the common names of plants have been used in communication and continue in daily use even today. The great value of the common names is that the words are those of the language of the country or region, hence widely understood, and are usually descriptive. The difficulties are that the names differ in different regions and in different languages -- nor have there been any rules by which names were devised. Hence, several plants may have the same name and one plant may have several names. In spite of these limitations, the common names of plants are very useful in daily conversation and often have a descriptive charm.

Examination of the common names of plants in the English language, and more specifically in American English, reveals many interesting origins and derivations. Since our present-day English arose from many sources, we find the common-names of plants reflecting these diverse origins.

Most common names are descriptive of some feature of the plant, for example:



Shapes: Arrowhead, Arrowwood, Aster, Bell Flower, Bladdernut, Blue Curls, Buckeye, Butterfly Pea, Cat-tail, Doll's-eyes, Dutchman's Pipe, Fairy Slippers, Fairy-wand, Goosefoot, Indian Pipe, Jack-in-the-Pulpit, Moccasin Flower, Monkey Flower, Monkshood, Pussy Toes, Squaw Corn, Turkey-beard, Wingstem.

Uses: Boneset, Canoe-birch, Chickweed, Colic-root, Cucumber-root, Duck-potato, Horse-balm, Horse-sugar, Paper-birch, Post-oak, Shingle-oak, Teasel (for teasing the nap on wool), Whitlow-wort (for treating infections around the finger and toe nails).

Colors: Black Cherry, Black Locust, Black Oak, Black Walnut, Bluets, Butter and Eggs, Buttercup, Cardinal Flower, Fire Pink, Golden Club, Goldenrod, Indian Pink, Red Oak, Silverrod, Snowberry, Sundrops, Swamp Pink, White Oak, White Walnut.

Habitats: Loblolly (mud puddle) Pine, Marsh Marigold, Mountain Ash, Mountain Magnolia, River Birch, Rock Cress, Sand Myrtle, Swamp Pink, Water-lily.

Odors and Tastes: Bitter-weed, Honey-locust, Honeysuckle, Skunk Cabbage, Sour-grass, Sugar Maple, Sweet Birch, Sweetleaf, Sweet Pepperbush, Sweet-shrub.

Textures: Cottonwood, Dogwood (Daggerwood because the hard wood allowed a sharp point), Hornbeam, Ironweed, Leather Flower, Leatherwood, Velvet-leaf.

Effects: Bindweed, Bugbane, Catchfly, Cowbane, Deadly Nightshade, Dogbane, Dog-hobble, Feverfew (relief of fever), Fleabane, Fly-poison, Heal-all, Hobblebush, Lambkill, Loosestrife (to free from trouble), Poison Ivy/Oak/Sumac, Sneezeweed, Sowbane, Stinging Nettle, Tear-thumb, Toothwort.

Time: Flower-of-an-hour, Juneberry, Live-forever, May Apple, Morning-glory, Prim(early)rose, Spring-beauty.

If we turn now to names originating in the Teutonic languages, we find they usually entered English through the Anglo-Saxon. The common names of many of our trees have this origin: Ash, Apple, Beech, Birch, Dogwood, Elm, Fir, Hackberry (Hag[witch]berry), Hawthorn, Hazel, Hemlock, Holly, Maple, Oak, Linden, Walnut (Foreign Nut), and Willow. Even Hop and Ivy came from the Teutonic as did a considerable number of the names of herbs: Baneberry, Clover, Foxglove, Honeysuckle, Nightshade, Strawberry, Stonecrop, Teasel, Thistle, and Yarrow.

Many names came into English from the Greek and Latin, often through the French. Examples are: Aspen, Arbor-vitae, Azalea, Alder, Agrimony, Bee-balm, Betony, Chestnut, Cypress, Dandelion (Lion's Teeth), Grape, Mullein, Magnolia, Marsh Marigold, Orchid, Onion, Peach, Pear, Periwinkle, Pine, Poplar, Poppy, Rose, Rue, Spruce, Sorrel, Sycamore and Tansy.

Into American English came names from the various Indian languages. Presumably the early settlers found plants with which they were not familiar and accepted the Indian names, such as, Chinquapin, Hickory, Pecan, Persimmon, Tupelo (Swamp Tree), Wahoo, Poke, Pipsissewa and Puccoon (Bloodroot).

Scattered throughout our language are a few names from many other sources. A few examples are: Arabic gives us Senna and Sumac, Spanish provides Pawpaw, Sassafras and Tobacco, Chinese gives us Ginseng and Ginkgo, and Persian gives us Lilac.

So our common names come to us from a variety of sources, all adding to the beauty and charm of our language.





RECORDER'S REPORT.....Elton Hansens

The winter program included a wide range of subjects presented as slide shows, lectures, workshops and group presentations. The meetings were well attended. Programs emphasized a broader look at the plant kingdom and interrelationships between plants and their environmental and physical factors.

February 23 marked the beginning of this field season when eleven hikers walked a portion of the Long Branch Trail in spite of threatening skies and a forecast of rain. By the next field trip on March 19 at Pearson's Falls, many early spring flowers were already in bloom and the falls, too, was especially beautiful. Through April and May our trips continued to emphasize habitats and plant successions. Geographically field trips extended from Congaree and Four Holes Swamp habitats in South Carolina to the Great Smoky Mountains of Tennessee and from the Experimental Forest of Clemson University to favorite trips on the Blue Ridge Parkway and in the National Forests.

Since the WCBC began lists have been kept of the flowers in bloom on each trip. Thus, we have a variety of lists from different locations and dates. Anne Ulinski computerized much of this information so it could be used more easily by the Program Committee. In the 1989 Recorder Report, Bess Sinish detailed a scheme for field trip records which would emphasize habitats and study of plant successions by repeat visits. The 1990 committee has decided to maintain 3 types of records for each site, namely 1. Field Location Profile, 2. Field Trip Report and 3. List of Flora in Bloom by Month. Each type of report is detailed below.

1. Field Location Profile.

Name of Location \_\_\_\_\_ miles (round trip)  
Detailed direction for the trip. \_\_\_\_\_ Nature of the terrain and difficulty. Hiking distance. Elevation. Ecology, special botanical features, etc. Any special hazards to be encountered (fording streams, etc. The report is to be general and not specific to one time of year.

2. Field Trip Report

Date \_\_\_\_\_ No. of Hikers \_\_\_\_\_ Leader \_\_\_\_\_  
Co-Leader \_\_\_\_\_

This report will include special environmental features not in the Profile--weather, special botanical features including non-flowering plants, unusual and/or uncommon plants, plants that are especially abundant or spectacular. This short narrative will give highlights and interesting happenings on a specific trip.

3. Monthly List of Plants in Bloom.

A separate list will be prepared for each field trip location--for each month when it is visited. Once a list has been established when revisited finds of new plants will be added to that list. Eventually we will have month by month lists of flowers in bloom at each site.

On the next page is a sample monthly list--Pearson's Woods in April.



## LIST OF FLORA IN BLOOM

PLACE PEARSON'S WOODSMONTH APRIL

4-11-86

4-8-88

4-14-89

4-6-90

- 6 -

|                                |                         |   |   |   |   |
|--------------------------------|-------------------------|---|---|---|---|
| Amsonia tabernaemontana        | blue star               |   | x | x | x |
| Anemone quinquefolia           | wood anemone            | x | x | x |   |
| Arisaema triphyllum            | jack-in-the-pulpit      | x | x | x | x |
| Asarum canadense               | wild ginger             | x | x | x | x |
| Calycanthus floridus           | sweet shrub             | x |   | x | C |
| Cardamine clematitis           | bittercress             | x | x | x |   |
| Cardamine concatenata          | toothwort               | x | x |   | G |
| Caulophyllum thalictroides     | blue cohosh             | x | x | x | x |
| Cerastium holosteoides vulgare | mouse-ear chickweed     |   | x | x | x |
| Cercis canadensis              | redbud                  |   |   |   | G |
| Claytonia virginica            | spring beauty           | x | x | x | x |
| Cornus florida                 | flowering dogwood       | x | x | x | x |
| Corylus sp.                    | hazelnut                |   | x |   |   |
| Dicentra cucullaria            | dutchman's breeches     | x | x |   | x |
| Disporum lanuginosum           | yellow mandarin         | x | x | x | C |
| Erigeron pulchellus            | robin's plantain        | x | x |   |   |
| Erythronium americanum         | trout lily              | x | x | x | G |
| Fragaria virginiana            | wild strawberry         |   |   |   | x |
| Glecoma hederacea              | gill-over-the-ground    | x | x | x | A |
| Halesia carolina               | silverbell              | x | x | x | x |
| Hepatica acutiloba             | sharp-leaved hepatica   | x | x |   |   |
| Hybanthus concolor             | green violet            | x | x | x | x |
| Iris cristata                  | crested iris            | x |   | x | C |
| Lamium amplexicaule            | henbit                  | x | x |   | x |
| Lindera benzoin                | spicebush               | x |   |   |   |
| Luzula sp.                     | woodrush                |   | x | x | x |
| Magnolia fraseri               | Fraser's magnolia       |   | x |   |   |
| Mertensia virginica            | Virginia bluebells      |   | x | x |   |
| Obolaria virginica             | pennywort               |   |   |   | x |
| Orchis spectabilis             | showy orchis            | x | x | x | x |
| Podophyllum peltatum           | mayapple                |   |   | x | x |
| Polygonatum biflorum           | Solomon's seal          |   | x | x | x |
| Ranunculus abortivus           | kidney-leaved buttercup |   | x | x | x |
| Sanguinarius canadensis        | bloodroot               | x | x |   | G |
| Sassafras albidum              | sassafras               |   | x |   |   |
| Saxifraga virginensis          | early saxifrage         | x | x | x |   |
| Shortia galacifolia (in yard)  | shortia                 |   |   | x |   |
| Smilacina racemosa             | false Solomon's seal    |   |   | x |   |
| Stellaria pubera               | giant chickweed         | x | x | x | x |
| Taraxacum officinale           | dandelion               | x | x | x | x |
| Thalictrum thalictroides       | early meadow rue        | x | x |   | x |
| Tiarella cordifolia            | foam flower             | x | x | x | C |
| Trillium cuneatum              | toadshade               | x | x | x | G |
| Trillium cuneatum luteum       | yellow trillium         | x |   | x | x |
| Trillium erectum               | wake robin              |   | x | x | x |
| Ulmus rubra                    | slippery elm            | x |   |   |   |
| Uvularia grandiflora           | large-flowered bellwort | x | x | x | x |
| Viola blanda                   | sweet white violet      | x |   | x | G |
| Viola canadensis               | Canada violet           | x | x | x | A |
| Viola eriocarpa eriocarpa      | smooth yellow violet    | x | x | x | x |
| Viola hastata                  | halberd-leaved violet   | x | x | x |   |
| Viola palmata                  | early blue or wood v.   | x |   |   |   |
| Viola papilionacea             | common blue violet      | x | x | x | x |
| Viola papilionacea priceana    | confederate violet      | x | x |   | x |
| Viola rafensquii               | wild pansy (in yard)    |   | x | x | x |
| etc. (3 additional spp.)       |                         |   |   |   |   |

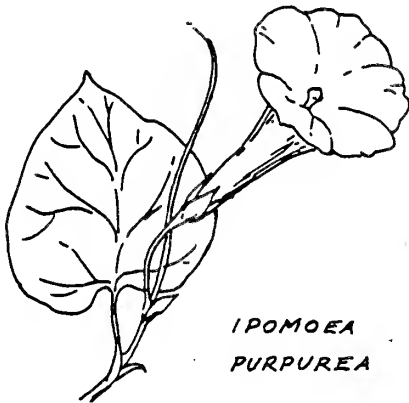
Code to Use X Blooming, A Abundant, S Spectacular, C Coming, G Going.



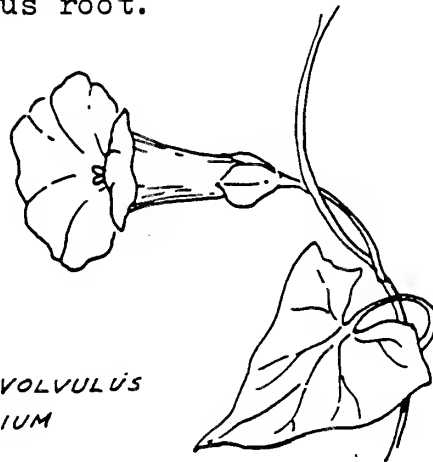
# LOOK AGAIN !

Most of us have had a long acquaintance with Morning Glories and feel we know them as well as any other flower. It comes as a surprise, then, to learn that we may have been applying the name to some vines to which it does not properly belong.

All of the true Morning Glories are in the genus Ipomoea, and an outstanding representative is the Common Morning Glory (I. purpurea). This has heart-shaped leaves and large, handsome funnel-shaped flowers which, despite the specific name, may range from white through many shades of pink and red to blue and purple. Another Morning Glory has even bigger blossoms--white with bright purple rays radiating from the throat. This one is I. pandurata, and among its common names are Wild Potato Vine and Man-of-the-Earth, the latter because of its enormous root.



*IPOMOEA  
PURPUREA*



*CONVOLVULUS  
SEPIUM*

Plants in the genus Convolvulus are known as Bindweeds. Hedge Bindweed (C. sepium), which comes in pink or white, bears a striking resemblance to the large Morning Glories. Differences may be seen in the pair of large outer bracts which cover the calyx (these are absent in Ipomoea), the two stigmas (Ipomoea has one), and the basal lobes of the leaves, which are pointed rather than rounded.

Two other large-flowered species, much less common in our region, are C. sericatus, which is downy, and C. spithameus, an erect, non-twining plant.

Note: Some authors have placed the Bindweeds (except the small-flowered Field Bindweed, Convolvulus arvensis) in the genus Calystegia.

*Dick Smith*





Vol. XII, No. 2

S H O R T I A

Summer 1990

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A quarterly publication of the Western Carolina Botanical Club

Editor: Dorothy Rathmann

Distribution: Frances Gadd

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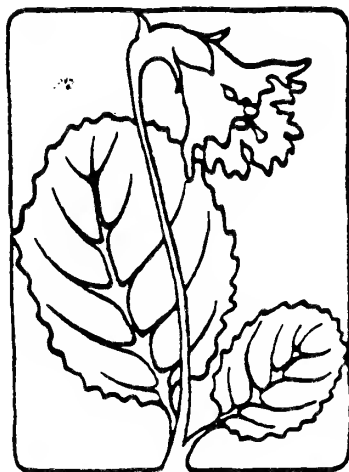


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# SHORTIA

NEWSLETTER OF THE  
WESTERN CAROLINA BOTANICAL CLUB

AUTUMN 1990



DOROTHY RATHMANN, Editor



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|                 |                  |            |                 |
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| Secretary:      | Charlotte Carman | Historian: | Louise Foresman |

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FROM THE PRESIDENT.....Bill Verduin

True, sometimes bigger is better -- as in ice cream cones! We all enjoy big displays of flowers -- Frying Pan Gap, Bee Tree Gap, the meadow at Black Camp Gap and, of course, the Turk's-cap lilies. Spectacular in size, in number, or in variety and we "ooh" and "aah" and enjoy the beauty.

But small is beautiful, too. Just because it is small we often miss the beauty. Our loss is regrettable. The mitrewort in the spring woods is a tiny flower of spectacular beauty under a hand lens. Spiderwort is still in bloom -- have you looked closely at the stamens? Who would have thought there was so much beauty in an otherwise mundane flower.

And that pesky mint family -- hard to tell apart -- but have you looked closely at the hoods and the lips and the aprons? Just the architecture of some flowers -- the orchids and milkweeds come to mind -- is marvelous to behold.

I know I'm laboring a point I've made often in recent years, but I do not yet see a great many hand lenses on our field trips nor much use of those present. As I use mine more and more often, I'm convinced we are missing a world of beauty begging to be seen, appreciated and enjoyed.

ADDITIONS TO 1990 MEMBERSHIP LIST

Hendersonville, NC 28739 unless otherwise noted

\*Nolan, Walter & Ellanor, PO Box 213, Penrose, NC 28766.....

6642 Hyde Grove Ave., Jacksonville, FL 32210

Tooley, Gordon & Pat, Rte. 4, Box 172, Brevard, NC 28712..... 883-8024

3423 Fiddler's Bend, Amelia Island, FL 32034

\*Wellborn, Jeffrey & Patricia, Rte. 1, Box 193 (28792)..... 685-0115

\* New Member



PHOTOS NEEDED FOR HISTORY BOOK.....Louise Foresman

Many of you may know that my camera has been "on the blink" for most of the spring and early summer. Consequently we have few pictures of our trips for the 1990 History Book which presently is being put together.

Also, we have no pictures prior to 1982. I think some of you must have photos taken during the early years of the Club. I particularly would like some of members and officers for the Club's first decade.

If any of you have photos (either slides or prints) of people or of the trail and surrounding area, please send or bring them to me. After copying, I will see that they are returned to you promptly. Thank you!

#### THE APPALACHIAN MIGRATORY CORRIDOR

(Excerpt from article by Murray Evans in THE HIGHLANDS BULLETIN, a publication of the Southern Appalachian Highlands Conservancy, in 1989)

"The above name is my invention for an idea whose time is coming, but which is by no means my own. We talk about biodiversity, land ethic, natural areas, endangered species, even megaherbivores on the mountain. We tend to think of conservation as static: National Parks, National Forests, parks, natural areas, a buffer zone around an endangered bat cave, a preserved bog for the bog turtle, high elevation preserves for the Southern Appalachian endemic and disjunct plants and animals, or even a way of life.

"All this assumes that our environment (be it biological, geological, climatological, or whatever) is static; but it's not. Change and adaptation is.....

"When we set aside a patch of ground to preserve an organism, there is absolutely no guarantee that it will stay there. It may stay there long enough to satisfy our short term needs. But in the long run there is a good probability that what we think we want to save will move out because conditions change to the point where the organism is no longer adapted to that place which we have preserved for it.

"The idea of an Appalachian Migratory Corridor then becomes fairly obvious. The new idea is not new. The Appalachians are a mountain arc that extend the now northern biota far into the southern reaches. The corridor could be more than just a foot path for bipeds, The Appalachian Trail. It could be a corridor wide and diverse enough to allow natural migrations to take place in the face of natural climatic change. It could be relatively wide through National Parks, National Forests, and other major preserves such as the Adirondack Preserve.....

"Adjustments would be a necessity where the 'corridor' encounters settlement and industry. We need to explore adaptations of our land ethic that could combine natural areas with appropriate settlement and land use.....

"This mingling of natural area with appropriate land use, private and public, is where I see the Roan Highlands and SAHC. We could be part of an 'Apmicor'."



RECORDER'S REPORT.....Elton J. Hansens

In the Summer 1990 issue of Shortia we detailed plans for more useful records of field trips and other meetings and this project moved forward in the last 3 months, when 17 trips were scheduled. Profiles, trip reports and lists of plants in bloom have been prepared for 13 of these trips. One trip was rained out and complete reports could not be finished on the other two. The reports are both interesting and informative.

TIDBITS FROM TRIP REPORTS.

Attendance ranged from 4 to about 40. The Moore's Cove trip on May 4 was rained out. The Roan Mountain trip on July 9, because of threatening weather, was changed to Mount Mitchell and Bee Tree Gap on the Parkway. We go to Craggy Gardens to see Rhododendron catawbiense and this was a complete bust this year. Not a single blossom or bud was seen. Displays of ferns were noteworthy at Big East Fork Trail on May 14 and Henry Creek on July 6. Sometimes an insignificant flower puts on a significant display; such was the case with Circaea quadrisulcata, enchanter's nightshade, in a small area on the Henry Creek trail.

The Day at Holmes State Forest resulted in a fine hike on the Long Trail in the morning, bountiful food, and a hard shower about 1 p.m. The crowd cleared out fast. Pinnacle Mountain delivered with some unusual flowers and also stings by yellow jackets. Anyone who is allergic to stinging insects should be sure to carry a protective kit on all trips.

Particularly fine floral displays were seen at Frying Pan Gap and Buck Spring Nature Trail. Bee Tree Gap on July 9 was a riot of color -- almost a solid carpet of bloom. Phlox, whorled loosestrife, brown-eyed susans, yarrow, columbine, ox-eye daisies and many others contributed to a spectacular display. Big Laurel Creek -- By general agreement we should not schedule another trip here at this time of year -- try September next time.

A LIST OF UNCOMMON FLOWERS seen this quarter is an arbitrary selection by the Recorder.

|                            |                                  |
|----------------------------|----------------------------------|
| Corydalis flavula          | yellow corydalis                 |
| Delphinium tricornes       | dwarf larkspur                   |
| Dodecatheon meadia         | shooting star                    |
| Orobanche uniflora         | one-flowered cancerroot          |
| Potentilla tridentata      | three-toothed cinquefoil         |
| Thalictrum clavatum        | lady-rue                         |
| Adlumina fungosa           | climbing fumitory (not in bloom) |
| Cypripedium calceolus      | yellow lady's slipper            |
| Habenaria psycodes         | purple-fringed orchis            |
| Circaea alpina             | dwarf enchanter's nightshade     |
| Helianthemum canadense     | frostweed                        |
| Apocyanum androsaemifolium | spreading dogbane                |
| Lysimachia ciliata         | fringed loosestrife              |
| Aureolaria pedicularia     | fern-leaved false foxglove       |
| Lechea racemulosa          | pinweed                          |
| Hypericum gentianoides     | pinweed                          |
| Liatris spicata            | spiked blazing star              |
| Shrankia microphylla       | sensitive briar                  |
| Stylosanthes biflora       | pencil flower                    |
| Talinum teretifolium       | fameflower (buds)                |
| Tephrosia virginiana       | goat's rue                       |
| Arenaria groenlandica      | thyme-leaved sandwort            |





LET'S TAKE A WALK.....ELTON J. HANSENS

Sun drenched fall days are a good time to go exploring for new experiences in nature. Let's take this walk through some open meadows and along roadsides where we will look especially for goldenrods. As we move along we will also recognize asters, sunflowers, Joe-pye-weed, and many others which, along with goldenrods, belong to the Asteraceae (Aster family). These are also called composites referring to the old family name Compositae.

All composites have highly specialized flowers and their description requires a special vocabulary. A few terms will be included here. That portion of the plant which has flowers is called the inflorescence and the individual flowers are in heads. Each head of the goldenrod is more or less cylindrical and is enclosed in a sheath of bracts called an involucre. To see the actual flowers tear away the involucre and with a hand lens you can see the tightly packed bouquet of minute yellow flowers. Note that many, many heads usually make up the inflorescence. The inflorescence may include many branches of the plant or be confined close to the main stem.

As we move along pick an aster or a sunflower and satisfy yourself that the inflorescence is in heads. In these flowers we have large "petals" projecting from the head which are known as ray flowers and they surround the many tubular disk flowers in the rest of the head.

Characteristics of the stem, leaves and inflorescence are used in identification: e.g. stems are smooth or hairy, leaves have 1 or 3 main veins, leaves are smooth or rough, toothed or entire, the inflorescence is corymbose, paniculate or racemose, etc. Of course, the details of the inflorescence are important for determination of the various species. Obviously, identification of Solidago is difficult when such minute characteristics are necessary. Not all authors agree on the details of some species.

Our best source of information on goldenrods is the authoritative "Manual of the Vascular Flora of the Carolinas" by Radford, A. E., H. E. Ahles and C. R. Bell. They list 39 species of Solidago, 38 goldenrods and one silverrod.

Identification may be somewhat easier using the 2-page "Key to Western Carolina Solidago" by Harvey Krouse, a former president of WCBC. This typewritten key is available from the WCBC Recorder and includes just the species in our area. In my experience, this key is difficult and I become very frustrated trying to identify any but the few easy goldenrods.

As we walk, paying special attention to goldenrods, we are impressed by the grace and beauty of the plants. To enjoy them we do not need to know the details of plant structure nor do we need to indulge in the difficult task of identifying the plant species. The masses of flowers and their color cause us to pause. The sheer beauty is enough.

Goldenrods are attractive to many insects especially on a sunny day when the plants are in full bloom. Nectar and pollen attract many kinds of bees, wasps, parasitic wasps, beetles, butterflies, skippers, moths and other insects. Honey bees make up a goodly portion of the visitors. Back in their hives the nectar is converted to the distinctive goldenrod honey, a well known robust flavored honey. Butterflies and skippers add beautiful color to the scene as they rest and feed. Look closely and you can see the proboscis being unrolled and successively probing the tiny flowers.



Not all insects visit goldenrods for nectar and pollen; many feed directly on the leaves, stems, and inflorescence either by eating these plant parts or by sucking out the juices. Many tiny beetles and caterpillars are consummate feeders. Pennsylvania soldier beetles are attractive yellow and black beetles about 3/4 inch long which are very active on goldenrod and feed on pollen and nectar. One of the more striking beetles attracted to the feast is the long-horned locust borer. It is yellow and black. Probably you will also recognize fireflies.

However, I am more interested in the various dramas that are played out on the goldenrod stage. I once took a picture of a butterfly which remained remarkably still. Only after I finished shooting did I notice, concealed among the heads, the crab spider which had captured the butterfly and killed it. You must look sharply to detect these spiders but they are often there. Similarly the cute little ambush bug, about half an inch long, will crawl down between the heads, anchor itself with four legs and hold the powerful forelegs which are modified for grasping in readiness to capture an unsuspecting insect. I have seen one of these insects with its beak inserted in a honey bee and very recently saw a spotted cucumber beetle in the grasp of an immature ambush bug.

Just today I visited a plant and picked off a curled leaf and inside was a small ladybird beetle larva gobbling down an aphid. Plants like goldenrods which attract so many kinds of insects also attract an array of parasites and predators. These insects include sucking insects such as the ambush bug and assassin bug and chewing predators including the praying mantis and ladybird beetle and its larvae.

The most abundant insects on goldenrod are aphids. They are so small that many people never see them. Let us look at a colony closely. The colony starts in the spring when the eggs hatch. The tiny nymphs grow to mature females in a short time. These females, without mating, give birth to nymphs which soon mature into more females. One generation after another follows in rapid succession. Sometime in the fall winged males and females are produced and these mate and lay eggs, often on a different plant. These eggs hatch the following spring. Because I do not know which aphid species we have been watching I can't be sure of the precise details of the cycle. Many aphid species vary from the usual life history.

Because aphids produce living young and because all stages feed almost constantly, aphid populations grow to unbelievable numbers completely covering the plant and ultimately destroying it. Look sharply at the aphid colony and you will see all sizes of nymphs, many molted skins, and perhaps females giving birth to young.

What a marvelous place for predators! Look for them among the aphids. Both larval and adult ladybird beetles feed voraciously on aphids. Maggots of syrphids (flower flies) also live in aphid colonies and eat large numbers of their aphid prey. None-the-less predators can rarely keep up with the aphid reproductive ability.

We could continue to discuss many other relationships between insects visiting goldenrod and between the plant and the insects. One more might be mentioned and that is the goldenrod gall. As you look at goldenrods watch for round swellings on the stems. These are caused by the goldenrod gall fly. The female fly lays an egg in the stem and the plant responds by forming the gall. The fly grows through its life-stages in the gall and the following spring emerges as an attractive fly with patterned wings to repeat the cycle.

Enough for this walk.



# LOOK AGAIN !

To anyone who is perplexed by the multiplicity of Aster species the Fleabanes (Erigeron) are a welcome relief, since only five kinds are to be encountered in the western Carolina mountains.

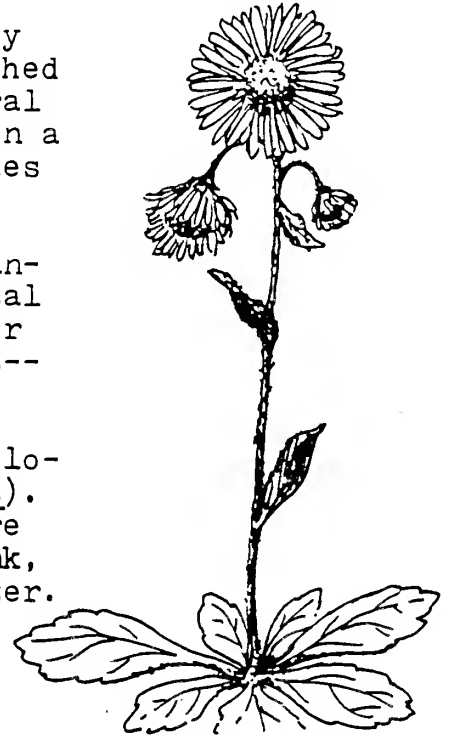
As a group, they are recognizable by their many ray-flowers, and can be distinguished from the Asters by the fact that the involucral bracts are of uniform size and are arranged in a single row instead of overlapping like shingles on a roof.

Erigeron pulchellus, or Robin's Plantain, is a hairy plant that arises from a basal rosette of leaves in early spring. Its flower heads are the largest--up to  $1\frac{1}{2}$  inches across--with white rays often tinged with lavender.

Following this at widely scattered locations is Common Fleabane (E. philadelphicus). This species is notable for having 100 or more exceedingly fine rays, usually a delicate pink, making up a head less than one inch in diameter. Its upper leaves clasp the stem.

Two others, with slightly smaller inflorescences, white or flushed with pink, bloom from late spring or early summer until fall.. Daisy Fleabane (E. annuus) has sessile leaves with sharp teeth, and spreading hairs on the lower stem. In the similar Lesser Daisy Fleabane (E. strigosus) the leaves are mostly untoothed, and the hairs are appressed.

In contrast to these attractive wildflowers, Horseweed (E. canadensis) is a rank, diffuse weed. It has multitudes of tiny flower heads each of which has a few very short white rays.



E. ANNUUS

E. STRIGOSUS

*Dick Smith*





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S H O R T I A

Autumn 1990

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Distribution: Frances Gadd

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# SHORTIA

NEWSLETTER OF THE  
WESTERN CAROLINA BOTANICAL CLUB

WINTER 1990 - 91



DOROTHY RATHMANN, Editor



**FROM THE PRESIDENT.....Bill Verduin**

Sunday afternoon: this is the appointed time to write my greetings for SHORTIA. The old rocking chair on my cabin porch is the appointed place. No topic has been appointed and I had nothing special in mind when I left the house -- but the short walk over gave me several ideas -- all related to the Woods in Winter

Most of the leaves have fallen, some scarlet oaks and a few sourwoods still add spots of color. But the openness has its advantages -- I can now see the ridge line clear across the valley. Closer in, just across the cove, I can see scattered white pine and other features on the long, finger ridge coming down off of Wolf Mountain. The trails in winter reveal so much both near and far that is never seen or even hinted at when the vegetation is lush. And birds are so much more visible in winter. If that pileated woodpecker, making a racket over my right shoulder, comes this way through the bare trees I'll surely see him.

Coming up the trail to the cabin, I passed a mountain laurel just loaded with flower buds. Checking some other nearby plants leads me to predict a very good bloom on the laurel next May.

Have you ever tried to identify an oak when you had only an acorn to go by? I tried it the other day for the first time -- and had beginner's luck. The acorn had well defined rings around the tip, characteristic of the Scarlet Oak. Pick up a copy of FRUIT KEY AND TWIG KEY TO TREES AND SHRUBS by Wm. M. Harlow and try your luck.

And then try Harlow to identify some twigs using the winter characteristics. If you think that's impossible -- or you can't get to first base when you do try -- come to the workshop we have planned for February 8. Learn how to be a wizard at winter plant identification.

There is just so much to do in the woods in winter -- things to look at, things to look for, sounds to listen to, winds to hear and to feel -- ferns, mosses, rosettes, trees, shrubs -- all can be enjoyed on winter walks. So don't hibernate! Take full advantage of those clear, beautiful days in winter when THE place to be is out in the woods!

**CHANGE OF JANUARY MEETING PLACE.....Bill Verduin**

The Henderson County Library will not be available for our meetings on January 11 and 25. We will hold both of these meetings in the Agricultural Extension Building in Jackson Park. This is a brick building on the west side of the road near the south end of the Park. A large parking lot is right at the door.

**ADDITION TO MEMBERSHIP LIST -- NEW MEMBER**

Caldwell, Edward, 183 Riverview Drive, Asheville, NC 28806.....

**INVITATION FROM FRANK BELL**

Frank and Calla Bell extend a cordial invitation to all WCBC members to visit their lovely place at Green Cove (Tuxedo). He says he has flowers in bloom every month of the year. Those who have been there know the Spring display is well worth a walk along his trails. Just phone ahead: 692-3241.



THE SAGA OF THE WHEEL-BUG .....ELTON J. HANSENS

In July, Bill Verduin reported that while eating lunch Evelyn noticed an orange to pink spot on one of their trees. When Bill investigated he found a large orange bug which he placed in a jar. Soon, he noted that the bug was shedding its skin and he identified it as a wheel-bug, Arilus cristatus. The adult insect is 3 cm. long and the wheel projects upright from the thorax. When Bill brought the specimen and cast skin to me, I confirmed his identification and elected to see if I could entice the bug to feed---but on what?

I remembered the nice big, smooth catalpa sphinx caterpillars, Ceratomia catalpae, I had seen defoliating a catalpa tree in the neighborhood. A large jar became the wheel-bug's environment along with fresh catalpa leaves and assorted sizes of caterpillars.

The wheel-bug did not feed for the next couple of days because the exoskeleton must harden after a molt. Then, feeling the wheel-bug was hungry, I placed it close to a caterpillar. The bug soon detected a possible meal and moved slowly toward the caterpillar, touched it gently with the tip of one antenna, and WHAM! In one forward movement the bug grabbed the caterpillar with its front legs and inserted its beak. In a matter of seconds the caterpillar was immobile and the bug proceeded to suck out the juices, moving farther down the worm from time to time to a new feeding location. Eventually the caterpillar turned dark, became flaccid, and died. The bug settled down to digest its meal. In the next week or so the wheel-bug consumed another eight to twelve caterpillars. Meanwhile, the caterpillars continued to eat catalpa leaves and became an important part of this story.

One morning when fresh catalpa leaves were provided for the caterpillars, one of the smaller caterpillars became the center of attention. About a dozen tiny white cocoons extended from its back and sides. I knew that they housed tiny parasitic wasps of the family Braconidae which had finished their feeding within the caterpillar, had emerged through its skin and had spun the cocoons.

Subsequently parasite cocoons appeared on other caterpillars. Two caterpillars had about 60 and 120 respectively. In the latter case 112 adult braconids emerged about a week after the cocoons were formed. These parasites were released near the catalpa tree.

You ask, "How could 120 parasite larvae be produced in a single caterpillar?" "Were 120 eggs laid in the caterpillar?" No, this is not the case; only one egg needs to be laid and then by a process known as polyembryony the cells of the egg divide and instead of producing one individual, multiple individuals result. In this case 120 larvae matured in the one caterpillar from one egg. Consider that the caterpillar fed and grew and provided enough nutrition for 120 parasites. With such parasitism the caterpillar never reaches its usual length of about 3 inches but does survive. Even after the cocoons are completed the caterpillar continues to move around in a sluggish fashion.

We saw a mature parasite larva cutting its way through a caterpillar body wall. As soon as it emerged the larva started to spin silk, first spinning a base on the caterpillar and then a loose envelope around itself. Within this loose silk it constructed a tight, white silk cocoon about 3 mm. long. This process took several hours. Within the cocoon changes take place rapidly and after a week the mature adult cuts the end from the cocoon, wriggles out and flies away. These adult wasps are only 3 to 4 mm. long.



After all of the parasitic wasps had emerged I happened to look at the remains of the very first larva we found with cocoons and was surprised to find a fly and its pupal shell. I identified the fly as one of the Tachinidae. These flies are also parasites in caterpillars. The female fly lays an egg in a caterpillar and it hatches into a maggot which matures within the caterpillar and emerges to become an adult fly. The catalpa sphinx larva, thus, had both tiny parasitic wasps (braconids) and a larva of the parasitic fly (tachinid) feeding within it. All emerged successfully as adults.

We can take this complex story one step further. One day as I closed a jar which contained the remains of a caterpillar killed by the wheel-bug, a tiny hump-backed fly (family Phoridae) flew into the jar and was trapped. The next day the caterpillar remains were seething with tiny maggots. Soon pupae were seen and a week later many adult flies had emerged. They are only 1 to 2 mm. long. Thus, though the wheel-bug had killed the caterpillar and fed on it, enough nutrition remained to feed a generation of the tiny phorid fly.

This saga could not be, without the wheel-bug and the catalpa tree.

**WHENCE PLANT NAMES? Part II — THE BOTANICAL NAMES.....Lowell Orbison**

In contrast to the thousands of years in which common names of plants have been in use, the binomial botanical names were devised only about 250 years ago by Linnaeus. This more nearly precise nomenclature has had little effect on the use of common names for it is not comprehensible unless specifically studied. But for the botanist and dedicated amateur, this system has a great advantage: each plant has only one binomial name which is recognized in botanical circles worldwide. Thus, the chances of confusion are greatly reduced.

In botanical nomenclature one must learn two names of each plant, a group name and a specific name, for example, **Magnolia** (a noun) and **tripetala** (an adjective). Most of these names are from the Greek and Latin; some commemorate individuals; some identify a site of origin; and a small number are from other languages. All have been Latinized.

Let us examine the generic name. Since words from both Greek and Latin are used frequently to express the same term or describe the same feature, the result can be confusing unless the linguistic origins are recognized. For example:

| English             | Greek    | Latin   | Example  |
|---------------------|----------|---------|--|
| Pea                 | lathyrus | pisum   |  |
| Tree                | dendron  | arbor   | <b>Rhododendron</b> (rose tree)<br><b>Arborvitae</b> (tree of life)          |
| Milk                | gala     | lac     | <b>Galium</b> (sap may curdle milk)<br><b>Lactuca</b> (milky sap)            |
| Two                 | di       | bi      | <b>Diphylleia</b> (two leaved)<br><b>Bifolia</b> (two leaved)                |
| Drooping or Nodding | prenes   | cernuum | <b>Prenanthes</b> (nodding flowers)<br><b>Allium cernuum</b> (nodding onion) |
| Gold                | chrysos  | aureus  | <b>Chrysanthemum</b> (golden flower)<br><b>Aureolaria</b> (golden)           |
| Resemble            | opsis    |         | <b>Coreopsis</b> (seed resembles a tick)                                     |
|                     | homoios  |         | <b>Ipomoea</b> (worm; bindweed; twining)                                     |





This last example illustrates that there are duplications even in the same language and, of course, many more comparisons between the Greek and Latin could be made. There are other terms that stand alone in one language or the other:

**Dianthus** (Greek from dio and anthus) Flower of the Gods

**Potentilla** (Latin) from belief in its medical potency

**Aristolochia** (Greek) from the belief that it helped in childbirth

**Polygonum** (Greek) many jointed

**Aster** (Greek) star and **Stellaria** (Latin) star

**Nymphaea** (Greek) waternymph

**Aquilegia** (Latin) for eagle claw-like spurs of the flower

**Anemone** (Greek) daughter of the winds; windflower

A number of generic names commemorate individuals, usually someone who has contributed to botany. A few examples are: l'Obel (**Lobelia**); Magnol (**Magnolia**); St. Barbara (**Barbaria**); vonHeucher (**Heuchera**); Anna Paulownia, daughter of Czar Paul (**Paulownia**); Clinton, governor of New York (**Clintonia**); Menzies, explorer in the Northwest (**Menziesia**); Duchesne, a French expert in strawberries (**Duchesnea**); Lespedez, Spanish governor of Floria, named by Michaux (**Lespedeza**); Kostoletsky, a Bohemian botanist (**Kostoletskya**); and Kalm, a pupil of Linnaeus (**Kalmia**);

Several generic names originated in other languages: **Taraxacum** and **Cichorium** in Arabic; **Ginkgo** in Chinese; **Tsuga** in Japanese; **Ailanthus** probably in Moluccan; and **Amelanchier** in French.

Turning from the generic to the species names we find that they, too, come mostly from the Greek and Latin. Like the generic names, the same descriptive terms for species are frequently expressed in either Greek or Latin. For example, even the simple numerical prefixes are duplicated:

| English | Greek    | Latin   |
|---------|----------|---------|
| One     | mono-    | uni-    |
| Two     | di-      | bi-     |
| Three   | tri-     | tri-    |
| Four    | tetra-   | quadra- |
| Five    | penta-   | quingu- |
| Many    | poly-    | multi-  |
| Large   | macro-   | grand-  |
| White   | leuco-   | alba-   |
| Red     | erythro- | rubro-  |
| Flower  | antho-   | floro-  |
| Leaf    | phyllo-  | folio-  |

Names for people, countries and regions are in the Latinized forms, and directions are usually Latin so these terms are relatively simple to understand. Examples of the Latinized names of people are: **Michauxii**, **Grayi**, **Fraseri**, **Elliottii**, **Drumondii**, **Smallii**, **Cutissii**, **Wherryi**, **Muhlenbergii**. Examples of Latinized geographical names are: **Canadensis**, **Sinensis**, **Caroliniana**, **Virginiana**, **Novae-angliae**, **Illinoensis**, **Laurentiana** and **Roanensis**. Directions are few and relatively easy: **australis** (south); **borealis** (north), **septentrionalis** (north), **centralis** (central), **orientalis** (east) and **occidentalis** (west).

Thus we find that though the use of Greek and Latin and the Latinization of all words complicates the botanical nomenclature, the overall effect is to stabilize and clarify the names of the plants throughout the world.



## RECORDERS REPORT.....Elton J. Hansens

Late summer and fall are an exciting part of the year for botanical field trips. The best trips are in open woodlands, fields, along roadsides and other places where plenty of sun favors plant growth and bloom. The Planning Committee did an especially good job in selecting trips that included much variation in elevation, terrain, habitats and other factors. In August, September and October a total of 15 trips were scheduled. Eight of these were especially rewarding for botanizing and I will discuss them in this report.

These trips are as follows: Aug. 10, Shut-in Trail; Aug. 17, Black Camp Gap including Plott Balsam, Black Camp Gap, Soco Gap and Heintooga; Aug. 31, Sugarloaf Mountain and road; Sept. 7, Foothills Equestrian Nature Center; Sept. 14, Camp Alice Trail on Mount Mitchell; Sept. 21, Blue Ridge Parkway South, stopping at 8 overlooks; Sept. 28, Butter Gap Trail; and Oct. 5, Hogback Mountain and the access road.

The recorder assembled a complete list of the species in bloom at all eight of these locations. Any club member who went on all 8 trips would have seen 198 species of plants in 119 genera and 34 families. Those who have familiarity with plants would know that the largest number of species in a family (74) were in the Asteraceae including 11 Aster (asters), 9 Solidago (goldenrods), 9 Eupatorium (joe-pye-weed, white snakeroot and others) and 5 Helianthus (sunflowers). Thirty-one other genera were represented. The Lamiaceae (mints) with 15 species, the Fabaceae (bean family) with 14, and the Scrophulariaceae (figworts) with 12 were the next most numerous. Of the species recorded 58% belonged to these 4 families.

We can also examine these data relative to the eight locations and how many of them are found in more than one place. You might expect to find many again and again and others requiring a more specialized habitat at only one place. This was the case. No species was found in all 8 locations but 3 species were found in 7 of the 8 sites. These three were white snakeroot, Eupatorium rugosum; yellow wood sorrel, Oxalis stricta; and selfheal or heal-all, Prunella vulgaris. White snakeroot blooms from late July to October. In North Carolina it is common in the mountains, frequent in the piedmont and rare in the coastal plain. Selfheal blooms from April to frost in fields, pastures, roadsides and lawns throughout the Carolinas. Yellow wood sorrel, Oxalis stricta, blooms from May to October and is common throughout our area in woodlands, thickets and hedgerows. When we see these and other ubiquitous plants we pass them quickly but pause and contemplate the less common plants.

These less common or rare flowers are often limited to unique conditions in the environment. In our 8 trips 117 species of our list of 198 were seen at only one of the eight locations. Many of these plant species were limited to very special environments (ecological niches). The trick is to find them. As we looked we were rewarded by seeing such uncommon plants as slender yellow-eyed grass, Xyris torta; grass of parnassus, Parnassia asarifolium; monkshood, Aconitum uncinatum; meadow beauty, Rhexia virginica; and others. I, for one, enjoy seeing such a wealth of flowering plants and their diverse habitats.

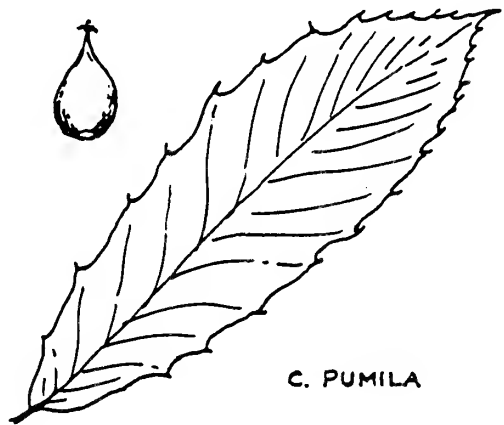
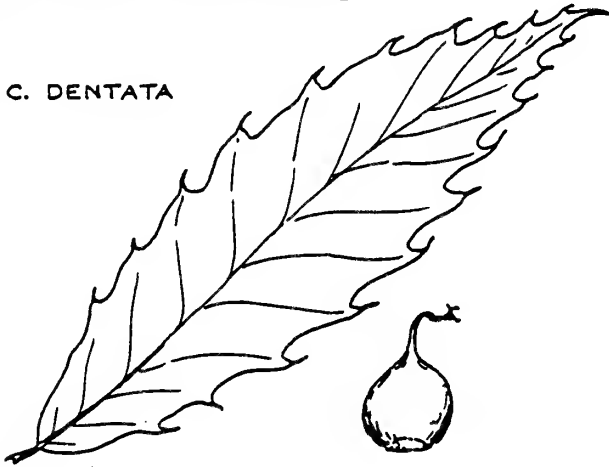
I would like to acknowledge the help of Anne Ulinski, Millie Blaha, Bill Verduin, and other WCBC members who assisted in recording flowers on these field trips.



# LOOK AGAIN !

As we walk through today's forests of oaks, hickories, beeches and maples it seems impossible that only a lifetime ago one-quarter of these trees would have been American Chestnuts. Yet when we look about we see ample evidence of this majestic species' prevalence before it was virtually wiped out by a lethal alien blight. A few silvery gray boles still stand erect; many more lie prostrate but are astonishingly sound. Even more abundant are old stumps ringed by vigorous, persistent sprouts that arise from the unaffected roots, some managing to produce spiny burs before succumbing.

C. DENTATA



C. PUMILA

The leaves of American Chestnut (Castanea dentata) have a distinctive look of sharpness about them, owing to the large bristle-tipped saw-teeth that give it its specific name and the long, attenuated apex. Beneath, they are pale yellowish green, smooth and shiny.

Sometimes mistaken for it is the related Allegheny Chinquapin (Castanea pumila), a shrub or at most a small tree. Here the leaves tend to be broader nearer the summit, and narrow more abruptly to a short tip, and the teeth are smaller. The undersides are whitened with a dense covering of soft woolly hairs.

When fruits are present, the two species can be easily differentiated. Chestnut burs are two inches or more in diameter, and each contains two or three nuts which are flattened on at least one side. In Allegheny Chinquapin, they are smaller and contain a single rounded nut.

*Dick Smith*





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NOTICE: Meetings on January 11 and 25 will be in the Agricultural  
Extension Building in Jackson Park. See page 2.

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